BULLETIN
OF THE INSTITUTE OF METALS

VOLUME 6 NOVEMBER 1961 PART 3

INSTITUTE NEWS

Autumn Meeting in Brussels

The Fifty-Third Autumn Meeting of the Institute took place in Brussels between 18 and 22 September at the invitation of the Union des Industries de Métaux Non-Ferreux, and a large party of members and their guests attended.

At the Opening Session members were welcomed by M. Marcel de Merre, the President of the Union des Industries de Métaux Non-Ferreux, who recalled that the Institute had met twice previously in Belgium (in Ghent in 1914 and in Liège in 1926), and that he and his colleagues were very pleased to be able to welcome them once again. M. de Merre referred to the growth of the Institute since it first visited Belgium. He said that the Institute, by bringing together metallurgists from the academic and the industrial worlds, and thus providing a link between fundamental and applied research, had acted as a catalyst in the remarkable progress in metallurgical knowledge that had taken place in recent years.

After the Opening Session the Autumn Lecture was delivered by Baron Snoy et d'Oppuers, on the subject of "The Non-Ferrous Metals Industry in a Unified Europe". The full text of the lecture will be published in the December issue of the *Journal*.

On the first evening of the meeting, members had an opportunity of meeting many Belgian members at a cocktail party held at the Metropole Hotel in Brussels. During the week members were entertained by the Burgomaster of Brussels, M. L. Cooremans at a reception at the city's historic Hôtel de Ville, and by their hosts at a banquet at the Concert Noble, which was attended by the leaders of the non-ferrous metal industries in Belgium. The toast of the Institute was proposed by M. de Merre and the President, Professor H. O'Neill, replied. At the Hôtel de Ville members were privileged to see a number of finely decorated rooms that are not usually open to the public.

On the final evening of the meeting the Council entertained M. de Merre and other representatives of the Union des Industries de Métaux Non-Ferreux and representatives of host companies to a dinner in the restaurant in the highest sphere of the Atomium, the special feature that was designed and built for the Brussels International Exposition in 1958.

During the week visits were paid to a number of works and laboratories in Brussels and elsewhere in Belgium.

Some photographs taken at the meeting appear on the next page.

PERSONAL NOTES

DR. G. L. J. BAILEY has been elected President of the Institute of Metal Finishing.

DR. W. BONFIELD is now at the Honeywell Research Centre, Hopkins, Minn.

DR. I. S. BRAMMAR has left Tube Investments Research Laboratories to take up a post at Aeon Laboratories, Englefield Green, Surrey.

PROFESSOR Dr.-ING. P. BRENNER, Director of the Research Laboratories of Vereinigte Leichtmetall-Werke, Bonn, has been awarded the Guido Donegani Gold Medal of the Associazione Italiana di Metallurgia in recognition of his contributions to light-alloy metallurgy.

PROFESSOR DR. W. G. BURGERS, of the Technische Hogeschool, Delft, has been awarded the degree of doctor honoris causa of Paris University.

MR. J. G. CAMPBELL has left Hawker Siddeley Nuclear Power Co. and taken up an appointment with Morganite Carbon, Ltd., as Technical Applications Engineer.

SIR JOHN COCKCROFT has been elected President of the British Association for the Advancement of Science for 1961–62.

MR. T. ELLIS has been awarded the Ph.D. degree of Liverpool University and has been appointed an Assistant Lecturer in metallurgy at that University.

MR. R. A. FARRAR is now at the Kumasi College of Science, Ashanti, Ghana.

MR. D. GRUBB is now at the Fulmer Research Institute, Stoke Poges, Bucks.

MR. C. C. HANSON has left Radiation Ltd. to take up an appointment with the Chrome-Alloying Co., Ltd., Hatfield, Herts.

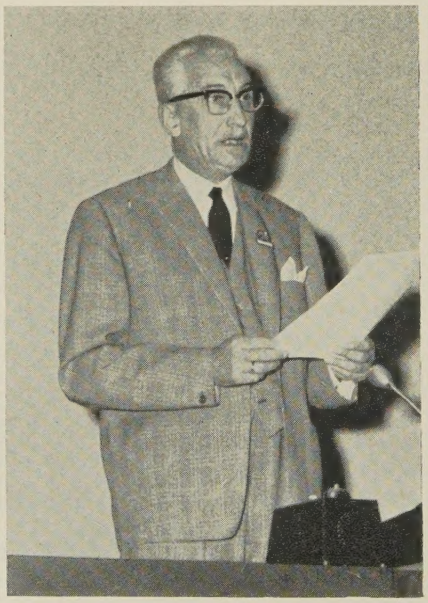
MR. G. J. JENKINS is now at the James Bridge Copper Works, Ltd., Walsall.

MR. N. C. LAKE, Deputy Managing Director of Head Wrightson and Co., Ltd., has been appointed Chairman of the North East Regional Council of the British Institute of Management.

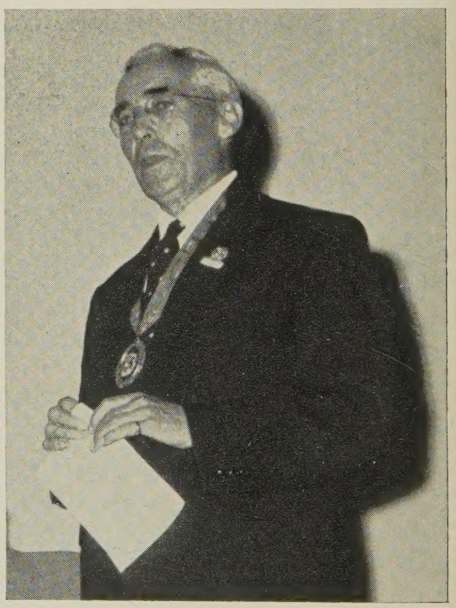
Left to right: M. de Merre (President of Union des Industries de Métaux Non-ferreux), Professor H. O'Neill (President of the Institute), Baron Snoy et d'Oppuers (Autumn Lecturer), and Colonel M.-C. Berger-Hainaut (Chairman of the Executive Committee).

AUTUMN MEETING, BRUSSELS, 1961

Baron Snoy et d'Oppuers delivering the Autumn Lecture.



M. de Merre welcoming members and guests at the opening session.



The President (Professor H. O'Neill) replying to the address of welcome.

PROFESSOR G. LETENDRE, of Université Laval, Quebec, has been elected an honorary member of the Société Française de Métallurgie.

MR. A. CRAIG MACDONALD has been appointed General Manager of Albion Motors, Ltd., Glasgow.

DR. J. W. MENTER has been appointed Director of the Tube Investments Research Laboratories, Hinxton Hall, near Cambridge.

MR. I. L. MOGFORD has been appointed a lecturer at the Rutherford College of Technology, Newcastle-upon-Tyne.

DR. E. R. PETTY has left Aluminium Laboratories, Ltd., Banbury, to become Senior Lecturer in the Metallurgy Dept. at Sheffield College of Technology.

MR. H. J. PROFFITT has left High Duty Alloys, Ltd., and joined Morganite Crucible, Ltd., Worcester, as a technical specialist responsible for development.

MR. J. S. ROBINSON has left the English Electric Co., Ltd., Stafford, and joined Standard Telecommunications Laboratories, Ltd., Harlow, Essex.

MR. C. G. G. RUDGE has left Alcan Industries, Ltd., to join the Pressed Steel Co., Ltd., Swindon, as Senior Metallurgist.

MR. D. M. G. SNEDDON has been appointed Chairman of The National Smelting Company, Ltd., Avonmouth.

DR. F. THÜMMLER is now at the Max-Planck-Institut für Metallforschung, Stuttgart.

MR. H. C. WATKINS has left England to take up an appointment in the Central Library of Rhoanglo Mine Services, Ltd., Kitwe, Northern Rhodesia.

MR. D. A. WATTS has graduated from London University and is now on a managerial training course with United Steel Companies, Ltd., Sheffield.

BRITISH NUCLEAR ENERGY CONFERENCE

An announcement by Sir Leonard Owen, C.B.E., M.I.C.E., M.I.Mech.E., M.I.Chem.E., Member for Production and Engineering, United Kingdom Atomic Energy Authority, and Chairman, British Nuclear Energy Conference

On 1 January 1962, the British Nuclear Energy Society will be established in succession to the British Nuclear Energy Conference, and the October issue, therefore, is the last one of the Journal in its present form and under its present title.

The successful use of nuclear energy demands the application of many divisions of science and technology and a constant interchange of knowledge and experience between those trained primarily in these divisions. It was to provide a channel for this interchange that, in 1955, the British Nuclear Energy Conference was established by the Institution of Civil Engineers, the Institution of Mechanical Engineers, the Institution of Electrical Engineers, the Institute of Physics, and the Institution of Chemical Engineers, who were joined later by the Iron and Steel Institute, the Institute of Metals, the Institute of Fuel, and the Joint Panel on Nuclear Marine Propulsion.

The Conference has sought to fill its role principally in three ways:

1. By publishing under one cover, in the Journal, all the more important papers on nuclear energy presented to the constituent societies.

2. By keeping members of the individual societies informed of those meetings of the other societies that are devoted to aspects of nuclear energy and making such meetings open to them.

3. By sponsoring meetings on nuclear energy organized either for the Conference by the appropriate societies or, where the subject involves the application of several disciplines, by the Conference itself.

The Board of the Conference feels, however, that the time has now come to provide a central forum for the discussion of nuclear energy and it is for this purpose that the British Nuclear Energy Society has been established. The Institution of Civil Engineers have made their premises in Great George Street, Westminster, available as a meeting place; and a regular programme of papers, lectures, symposia, and informal discussions is being planned.

The Society will (like the Conference) publish a quarterly Journal, which, in addition to reprinting a wide range of important papers, will also contain original papers and discussion on them, information and authoritative scientific and technological comment on developments in nuclear energy throughout the world, and reports on the proceedings of meetings of the Society. The first issue of this Journal will be in January 1962.

Membership of the new Society will be open on application to members of all classes of the constituent societies of the British Nuclear Energy Conference and to all who satisfy the Board that they are (to quote the Society's constitution) " actively engaged in the professional, scientific, or technical aspects of the application of nuclear energy and ancillary subjects ".

To ensure continuity, for the first year the affairs of the Society will be managed by the present Board of the British Nuclear Energy Conference, but thereafter the Board will include members elected by and from the general membership of the Society.

An application form for membership is enclosed with this issue and, on completion, should be sent to the Secretary at 1–7 Great George Street, London, S.W.1. Its prompt return and acceptance will mean that you will be able to participate from the start in the activities of the new society.

U.K.A.E.A. Reactor Group

POSTS ARE AVAILABLE IN THE

FUEL ELEMENT GROUP

AT DOUNREAY EXPERIMENTAL REACTOR ESTABLISHMENT

SCIENTISTS

METALLURGISTS—PHYSICISTS—CHEMISTS

(Reference 2381/1081) A SENIOR SCIENTIFIC OFFICER and SCIENTIFIC OFFICERS,

are required to fill posts as leader and members of a team created to assess the stability of fuel materials under conditions of reactor operation, including the effects of temperature and irradiation on the chemical and physical reactions which may take place. The work would include the devising and execution of suitable laboratory tests, and assisting with the devising of irradiation trials which will extend the laboratory investigations. The senior post demands applicants with a sound understanding of the chemical and physical processes which can take place in metallic and ceramic materials. The appointed officer will have to be able to devise experiments to enable investigations to be made of individual reactions complicated by other processes. He must also be capable of devising theoretical models for the complex processes taking place and of suggesting critical experiments designed to refine these models.

(Reference 2382/1081) A SCIENTIFIC OFFICER

Whose duties will be to assist in the development of equipment for carrying out tests in fuel materials and fuel elements both under irradiation and in out-of-pile tests. Much of the work involves the application of standard physical methods to equipment whose size and complexity is dictated by the test environment, for instance, the size of the irradiation test facility may require " miniaturing " of standard equipment, while the fact that the test is under nuclear irradiation may limit the materials used. Applicants for this post will be required to have a sound knowledge of basic physical measurements and an appreciation of the difficulties of constructing small but robust equipment.

(Reference 2383/1081) A SENIOR SCIENTIFIC OFFICER and SCIENTIFIC OFFICERS,

are required to fill posts as leader and members of a team engaged on the development and production on a pilot plant scale of fuel element sub-assemblies for irradiation in the Dounreay Fast Reactor. The work will entail investigation of the manufacture of specimens as designed, and development of improvement in design in the light of experience gained, followed by production of small quantities of specimens using development equipment for test purposes. The manufacturing processes include cermet fabrication by powder metallurgy and mechanical working methods, and the use of a variety of welding and brazing techniques.

Applicants for these posts will be men interested in applying their knowledge and skill to produce components for service trials and in improving methods of manufacture. One officer will be appointed to take charge of a small experimental team backed up by other teams working on the laboratory scale testing of materials and the small scale investigation of feasible manufacturing methods.

SALARIES: Senior Scientific Officers on the scale £1,440–1,770 p.a.
Scientific Officers on the scale £790–1,310 p.a.

QUALIFICATIONS: For all posts applicants must have at least a 2nd class honours degree in an appropriate subject, or its equivalent.

Rented housing and house purchase assistance available for married officers living beyond daily travelling distance.

Single accommodation available. Contributory Superannuation.

Send postcard or letter for application form quoting appropriate reference to:

PERSONNEL MANAGER, U.K.A.E.A., E.R.E., DOUNREAY, THURSO, CAITHNESS

OTHER NEWS

Fourth International Conference on Non-destructive Testing

The Fourth International Conference on Non-destructive Testing is to be held in London from 9 to 13 September 1963. The Council of the Institution of Mechanical Engineers have agreed to arrange the Conference, which is sponsored by the British National Committee for Non-destructive Testing. Accordingly, the Council have set up an Organizing Committee in collaboration with the British National Committee to plan this Conference.

The scope of the Conference will include all aspects of non-destructive testing, and papers will be admitted under the following headings. These are tentative and are subject to review by the Organizing Committee, but are listed for the guidance of prospective authors:

(i) Basic physics and selection of method.
(ii) Non-destructive testing in general structures, including, for example, chemical plant, refineries, buildings, bridges, power plants, &c.
(iii) Non-destructive testing in transport, including, for example, ships, aircraft, &c.
(iv) Future needs in non-destructive testing.

Prospective authors are invited to write in the first instance, giving proposed titles of papers, *to the Secretary of the Institution of Mechanical Engineers* for further information and for a guide to the preparation of papers. The final decision on acceptance rests with the Council of the Institution.

The language of the Conference will be English, but it is hoped to publish summaries in French and German with each paper, and to provide interpretation facilities during the Conference.

Papers will be presented for discussion by rapporteurs if the number of contributions accepted necessitates this procedure. In this event authors will have opportunities to reply to discussion in person. If the number of papers is relatively small, it may be possible for authors to present them in person.

All papers accepted will be preprinted and published in advance of the Conference. The Proceedings of the Conference will contain, in addition to the papers, a report of the discussion, communications, and the authors' considered replies.

An exhibition will be arranged in conjunction with the Conference, and will be held on the Institution's premises. Authors will be invited to provide exhibits which will be such as to illustrate their papers. Commercial exhibits will be accepted only in exceptional circumstances.

A programme of visits will be arranged in conjunction with the Conference, including a Tour of the English Midlands during the week beginning 16 September 1963. The tour will take in both works and sightseeing visits. Various social functions are being planned for authors, delegates, and their ladies. Registration for the Conference will be required.

All inquiries should be addressed to The Institution of Mechanical Engineers, 1 Birdcage Walk, London, S.W.1.

Symposium on " Some Aspects of Vacuum Science and Technology "

The Institute of Physics and the Physical Society announce that a one-day symposium on " Some Aspects of Vacuum Science and Technology " will be held at Imperial College of Science and Technology, London, on 5 January 1962.

The scope of the symposium will be: (*a*) continuously exhausted bakeable vacuum apparatus for pressures below 10^{-9} mm of mercury, and (*b*) the controlled deposition of evaporated film.

Further details and application forms are available from the Administration Assistant, The Institute of Physics and The Physical Society, 47 Belgrave Square, London, S.W.1.

Course on " Chemical Applications of Diffraction Methods "

A special short course on " Chemical Applications of Diffraction Methods " will be held at the Bradford College of Technology on 24 and 25 November 1961. The fee for the course is £2 5*s.* 0*d.* The course is being organized by Dr. D. W. Jones, Department of Chemical Technology, Bradford Institute of Technology, Bradford 7, Yorks, from whom further details may be obtained.

Symposium on " The Ferro-Alloy Industry in India "

A Symposium on " The Ferro-Alloy Industry in India " will be held early in February 1961 at the National Metallurgical Laboratory, Jamshedpur. The meeting is intended to provide an international forum for establishing personal contacts and for facilitating the exchange of ideas on the development of the ferro-alloy industry in general and that of India in particular. A circular regarding the symposium may be obtained from the Director, National Metallurgical Laboratory, Jamshedpur 7, India.

DIARY

Powder Metallurgy Joint Group

7 December. Discussion on four papers published in *Powder Metallurgy*. (Church House, Great Smith Street, London, S.W.1, at 2.30 p.m.)

8 December. Symposium on " Sintered High-Temperature Compounds ". (Church House, Great Smith Street, London, S.W.1, at 10.0 a.m. and 2.15 p.m.)

[A detailed programme was published in the October issue of the *Bulletin*.]

Local Sections and Associated Societies

20 November. North East Metallurgical Society. " Recent Advances in the Foundry ", by A. T. Andrew. (Cleveland Scientific and Technical Institution, Corporation Road, Middlesbrough, at 7.30 p.m.)

22 November. Manchester Metallurgical Society. " Metallurgy of the Rarer Metals ", by Dr. J. C. Chaston. (Headquarters of the Manchester Literary and Philosophical Society, George Street, Manchester, at 6.30 p.m.)

23 November. Birmingham Local Section. " The Cold Extrusion of Steel ", by R. W. A. Wright. (College of Advanced Technology, Gosta Green, Birmingham, at 6.30. p.m.)

23 November. Sheffield Local Section. Symposium on " Inclusions in Metals ", with contributions by B. P. Barnsley, T. R. Allmand, and D. A. Melford. (Applied Science Building of the University, St. George's Square, Sheffield, at 2.0 p.m.)

23 November. Southampton Metallurgical Society. " Electroplating Processes: Effect on Fatigue Strength and Embrittlement of the Substrata ", by C. Williams. (Southampton University, at 7.15 p.m.)

27 November. Tyne Wear Metallurgical Society. Visit to the Metals Division of Vickers-Armstrong (Engineers), Ltd., Newcastle-upon-Tyne.

29 November. Southampton Metallurgical Society. "Organic Detecting and Elimination of Gases in Cast Metals", by Dr. D. V. Atterton. (Southampton Technical College, at 7.15 p.m.)

5 December. Leeds Metallurgical Society. "Dislocations", by Professor J. Nutting. (University Staff House, University Road, Leeds, at 6.30 p.m.)

6 December. Manchester Metallurgical Society. "The Newer Magnetic Materials", by K. Hoselitz. (Headquarters of the Manchester Literary and Philosophical Society, George Street, Manchester, at 6.30 p.m.)

7 December. Birmingham Local Section. "Stress-Temperature Relaxation of Springs", by R. Haynes. (College of Advanced Technology, Gosta Green, Birmingham, at 6.30 p.m.)

7 December. East Midlands Metallurgical Society. "Metallurgy of Tungsten", by D. J. Jones. (Faculty of Applied Science, Clifton Boulevard, The University, Nottingham, at 7.30 p.m.)

7 December. Liverpool Metallurgical Society. "The Explosive Forming of Metals", by Dr. H. Thomas. (Department of Metallurgy, The University, Liverpool 3, at 7.0 p.m.)

11 December. Scottish Local Section. "Progress in the Electron Theory of Metals", by Dr. J. A. Catterall. (Institution of Engineers and Shipbuilders, Elmbank Crescent, Glasgow, C.2, at 6.30 p.m.)

11 December. Tyne Wear Metallurgical Society. Short lectures by three members on: "Metallurgical Problems Encountered in Their Work". (Metallurgy Department, Kings College, Haymarket, Newcastle-upon-Tyne, at 6.30 p.m.)

12 December. Oxford Local Section. "Lattice-Spacing Determination as a Tool in Metallurgical Research", by Professor G. V. Raynor. (Cadena Café, Cornmarket Street, Oxford, at 7.15 p.m.)

12 December. South Wales Local Section. "Some Theoretical Aspects of the Sintering of Metal Powders", by Dr. G. A. Geach. (Metallurgy Department, University College, Swansea, at 6.30 p.m.)

14 December. London Local Section. "Feeding Non-Ferrous Metals Castings", by E. C. Mantle. (Joint Meeting with the London Branch of the Institute of British Foundrymen.) (National Liberal Club, Whitehall Place, London, S.W.1, at 7.0 p.m.)

14 December. Sheffield Local Section. "Metals in the Jewellery Industry", by Miss D. L. Pile. (Applied Science Building of the University, St. George's Square, Sheffield, at 7.30 p.m.)

14 December. Southampton Metallurgical Society. "Fatigue", by T. R. G. Williams. (Southampton University, at 7.15 p.m.)

APPOINTMENTS VACANT

WANTED: A TECHNICAL GENERAL MANAGER for an extrusion plant in India scheduled to produce copper and brass tubes, rods, sections, etc. The applicant must be fully qualified and experienced in the planning of similar plants. He will be required to supervise installation, starting up, and the subsequent running of the plant. In the first instance a three year contract which will INCLUDE TAX FREE EMOLUMENTS in addition to the usual overseas service conditions would be offered. Replies will be treated in strict confidence. Reply Box No. 466, The Institute of Metals, 17 Belgrave Square, London, S.W.1.

THE GLACIER METAL CO. LTD.

Kirkstyle, Kilmarnock, Ayrshire

RESEARCH METALLURGIST

A Research Metallurgist is required for the expanding Metallurgy Department of the Research and Development Organization which is situated at Kilmarnock.

The Company, the largest manufacturers of Plain Bearings in Europe, subjects its processes and products to vigorous and continuing research and development.

The successful applicant will assist in research work on metallurgical processes, with particular reference to the manufacture and properties of alloy powders used in the production of sintered materials. He will discover and quantify the basic principles involved, and plan, design, and execute his own experiments and make recommendations, as appropriate, for changes in existing production procedures and techniques.

The ideal candidate for this position will have a Degree in Metallurgy or Physics, and/or A.I.M. or A.Inst.P., and have had at least two years' experience of research work, preferably in powder metallurgy.

The preferred age range is 23–30 years, and a starting salary up to £1,250 per annum is envisaged, depending upon age, qualifications, and experience. There are excellent prospects for further advancement.

Applications containing brief reference to age, qualifications, and present salary should be sent to the Personnel Services Manager, quoting reference. 3/RDO/15/143/J.I.M.

FERODO LIMITED

RESEARCH DIVISION

. . . Have a vacancy for a Metallurgist/Ceramicist for research work in the development of Sintered Friction Materials containing ceramics.

Candidates should preferably be good honours graduates in their mid-twenties, though consideration will be given to applicants who have qualified for membership of the appropriate learned society. Experience within the above field would be of advantage but is not essential.

Financial assistance for house purchase can be made available and a generous pension scheme applies.

The Research Division is situated in a pleasant rural area of the Peak District and abuts on to the National Park.

Applications, which will be treated in the strictest confidence, should state age, qualifications, and experience and be addressed to the Personnel Manager, Ferodo Limited, Chapel-en-le-Frith, Derbyshire.

C. A. PARSONS & CO., LTD., have a vacancy for a qualified metallurgist in the Mechanical Properties Laboratories.

The position carries responsibility for individual projects covering creep and high-temperature properties of magnesium, uranium, and zirconium alloys for nuclear plant, and steels for turbo-alternator plant.

The qualifications required are a degree in metallurgy or its equivalent, and preferably five years' industrial experience. It is expected that the age range for this appointment will be between 27 and 40 years.

Applications, giving details of qualifications and experience, should be forwarded to Personnel Manager, C. A. Parsons & Co., Ltd., Heaton Works, Newcastle-upon-Tyne 6.